

Chapter 12:

Transportation

12.0 TRANSPORTATION

12.1 INTRODUCTION

This chapter has been produced to assess and evaluate the likely impact of a proposed residential development on the local transportation network within the southern environs of Drogheda, as well as identifying proposed mitigation measures to minimise any identified impacts.

The subject development proposes for the development of a greenfield site of approximately 13 Hectares to provide 357. no residential units, in line with Meath County Development Plan and local area plan future development and land use zoning objectives. The proposed development also plans to provide pedestrian and cycle links to the neighbouring communities, tying into existing pedestrian and cycle facilities along Colpe Road and linking further towards the Townlands of Colpe West and Drogheda Town Centre via Colpe Cross.

Traffic surveys were commissioned specifically for this assessment with the objective of providing background information relating to existing traffic movement patterns across the local road network. The AM and PM peak period weekday vehicle turning count survey was conducted by MHC Traffic Ltd. On Thursday 25th May 2017, across a six-hour period from 07:00 to 10:00 and 16:00 to 19:00. This survey was carried out across five junctions, with both Junction Turning Counts, (JTCs) and Automated Traffic Counts (ATCs) undertaken which has been used to establish a peak hour of 08:30 - 09:30 as the AM Peak and 17:00 – 18:00 as the PM Peak hour for network activity.

The purpose of this chapter is to quantify the existing transport environment and to detail the results of assessment work undertaken to identify the potential level of any transport impact generated as a result of the proposed residential development. The scope of the assessment covers transport and related sustainability issues including means of vehicular access, pedestrians, cyclists and local public transport connections.

This assessment is being carried out in accordance with the following guidance and established best practice:

- Environmental Protection Agency (EPA) Guidelines on the information to be contained in the EIAR;
- Transport Infrastructure Ireland (TII) (Formerly National Roads Authority) Traffic and Transportation Assessment Guidelines.

Reference has also been made to the Local Area Plan for the Southern Environs of Drogheda (2009 – 2015) and the Meath County Development Plan 2013 – 2019.

12.2 STUDY METHODOLOGY

The approach to this assessment accords with policy and guidance both at a national and local level. Accordingly, the adopted methodology responds to best practices, current and emerging guidance, exemplified by a series of publications, all of which advocate this method of analysis. Key publications consulted include:

- '*Traffic and Transport Assessment Guidelines*' (May 2014) National Road Authority;
- '*Traffic Management Guidelines*' Dublin Transportation Office & Department of the Environment and Local Government (May 2003);
- '*Guidelines for Traffic Impact Assessments*' The Institution of Highways and Transportation;
- *Local Area Plan for the Southern Environs of Drogheda 2009-2015*;
- *Meath County Development Plan 2013-2019*;
- *Draft Meath County Development Plan 2020-2026*.

In summary, our methodology incorporated a number of key inter-related stages, including:

- **Background Review:** This important exercise incorporated three parallel tasks which included (a) an examination of the local regulatory and development management documentation; (b) an analysis of

previous ‘transport’ related, strategic and site specific studies of development and transport infrastructure proposals across the Southern Drogheda Environs, and (c) a review of planning applications to establish the legal status of various third party development schemes, listed within Section 12.7 Potential Cumulative Impacts that were either considered within the strategic ‘transport’ studies or which have emerged and received full planning permission since.

- **Site Audit:** A site audit was undertaken to quantify existing road network issues and identify local infrastructure characteristics, in addition to establishing the level of accessibility to the site in terms of walking, cycling and public transport. An inventory of the local road network was also developed during this stage of the assessment.
- **Traffic Counts:** Junction Turning Counts (JTCs) and Automatic Traffic Counts (ATCs) were undertaken by MHC Traffic Ltd. and analysed with the objective of establishing local traffic characteristics in the immediate area of the proposed Residential development. Further information of the traffic surveys carried out may be seen in Section 12.1 above.
- **Trip Generation:** A trip generation exercise has been carried out to establish the potential level of vehicle trips generated by the proposed Residential development.
- **Mode Analysis & Trip Distribution:** Based upon both the existing traffic characteristics and Travel Trends from the Central Statistics Office Household Survey 2016, a distribution exercise has been undertaken to assign site generated vehicle trips across the local road network.
- **Network Analysis:** Further to quantifying the predicted impact of vehicle movements across the local road network for the adopted optimum site access strategy more detailed computer simulations have been undertaken to assess the operational performance of key junctions in the post development 2022, 2027 and 2037 development scenarios.

12.3 EXISTING RECEIVING ENVIRONMENT

The existing site for the proposed development is a greenfield site which has been zoned for residential development by Meath County Council, within the southern environs of Drogheda Local Area Plan Lands.



Figure 12.1 – Site Location

The general location of the subject site in relation to the surrounding road network is illustrated in **Figure 12.1** above. The site is located in the south-eastern environs of Drogheda, in the townlands of Colp West. The site is currently bound by the Belfast-Dublin Railway Line and greenfield sites to the North and South, with connections to Colpe Road.

Colpe Road is a wide single carriageway in the vicinity of the site, which offers no dedicated pedestrian footpath nor cycle facilities in the immediate vicinity of the subject site. Travelling westbound along Colpe Road from the subject site approximately 400m from the Colpe Road Mill Road junction there are pedestrian and cycle facilities which provide safe connectivity towards Drogheda Town Centre via Dublin Road, however, there is currently no connection to these facilities from the subject site. Dublin Road R132 also offers cycle facilities which provide connectivity towards Drogheda Town Centre. Cyclists are currently compromised by relatively high traffic volumes and speeds on sections of Marsh Road, Colpe Road and Mill Road.

Drogheda benefits from national, regional and local bus services as provided by private and public sector operators. Bus Eireann provides a number of services linking Drogheda with Dundalk to the north and Dublin to the south where connections can be made to further regional / national services and destinations across the country. The Bus Eireann services are supplemented by a number of private operators with a level of competition that is not typical for other similarly sized towns.

12.4 CHARACTERISTICS OF THE PROPOSED DEVELOPMENT

12.4.1 Overview

The subject proposals seek permission to develop a section of the existing greenfield site and construct a new residential development of approximately 357 total units, with a mix of houses, apartment and duplex units and a crèche, within 9.3 Hectares of Residential zoned lands.

This development proposes to provide two new bus stops (in both directions) within 50-100 metres of the southern boundary of the development site, along the approved link street. This development also aims to deliver pedestrian and cycling facilities between the subject site and the existing pedestrian and cycling facilities along Colpe Road to provide connectivity to Drogheda Town Centre via Colpe Cross and Dublin Road. This development also includes for the provision of a pedestrian/cycle bridge over the Dublin/Belfast Railway line, providing additional connectivity to Colpe Cross, Drogheda and MacBride Station.

The subject proposal has been developed under the guidance of the Urban Development Framework Plan (UDFP) and the Mill Road Marsh Road Transport Study. This proposal has been produced to align with these documents to provide a consistent design that fits the character profile and design requirements outlined in these guidance documents.

Development	Units/GFA
Apartments	136 Units
Duplex	52 Units
Houses	169 Units
Crèche	439 m ²
Total	357 Units*

Table 12.1 – Development Schedule

Vehicle and Cycle Parking

The development proposes a total of 532 bicycle parking spaces for the residential units. With regard to car parking provision within the development, it is proposed to provide a total of 592 car parking spaces for the 357 residential units within the development. These are based on the MCC Development Plan standards and the Department of Housing, Planning and Local Government – ‘Sustainable Urban Housing: Design Standards for New Apartments March 2018’. The document highlights that for new developments such as the proposed site, the document states that ‘the Planning Authority must consider a reduced overall car parking standard’. It is therefore proposed to provide a reduced number of car parking spaces for the Build to Rent apartments at a ratio of 1 space per unit. This figure would be below that of MCC Guidelines, but would fall in line with the DHPLG: Design Standards for New Apartments.

The development also proposes a number of mobility impaired spaces as well as electric vehicle parking spaces.

Pedestrian and Cycle Access

The proposed site will have good accessibility for both pedestrians and cyclists with a number of access points proposed, whilst also providing connections to Colpe Cross, MacBride Train Station and Drogheda Town, including pedestrian and cycle facilities to tie into existing facilities along Colpe Road, including a pedestrian and cycle bridge across the Dublin-Belfast Railway Line.

12.5 POTENTIAL IMPACT OF THE PROPOSED DEVELOPMENT

12.5.1 Scope of Assessment

This EIAR and its associated Traffic and Transport Assessment has been scoped out using Transport Infrastructure Ireland “Traffic and Transport Assessment Guidelines” coupled with industry best practice. This assessment aims to determine the impact of the proposed residential development upon both the traffic network in the vicinity of the subject site as well as the predicted transportation impacts which may be experienced beyond the modelled traffic network. In order to assess these impacts, National Roads Authority (now Transport Infrastructure Ireland) ‘Traffic and Transportation Assessments Guidelines’ (2014) have been used to ensure that the proposals promote sustainable development and minimise the impact of the development on the surrounding roads network.

In order to assess the traffic network on the surrounding network, baseline traffic data must first be analysed, and then all cumulative impacts from committed development and network growth rates must be applied to account for future growth of the network. Scenarios are then developed to include for the development’s associated trips and any network changes which may occur throughout development scenarios.

An assessment of the percentage impact for the traffic network has been undertaken to determine whether or not the development impact is material upon the junction, and therefore, would require further analysis. The Transport Infrastructure Ireland document ‘Guidelines for Traffic Impact Assessments’ states that the impact of a proposed development upon the local road network is considered material when the level of traffic it generates surpasses 10% and 5% on normal and congested networks respectively. When such levels of impact are generated, a more detailed assessment should be undertaken to ascertain the specific impact upon the network’s operational performance.

All junctions which require further detailed assessment are subject to their relevant Traffic Modelling Software packages; for this EIAR, the modelling software packages ARCADY, PICADY and TRANSYT were used to further assess roundabout junctions, priority-controlled junctions and signal-controlled junctions, respectively. From these junction analysis results outputs, the level of junction capacity and junction operational performance may be determined to conclude the effects of the proposed development upon each junction of the traffic network.

In order to determine the effects on areas outside the scope of the traffic network modelled, the impacts of the proposed development on all junctions within the traffic network from the proposed development were reviewed to determine whether they were materially impacted. As the junctions assessed which are furthest from the proposed development did not display a material impact greater than the 5% threshold, as per the NRA/TII Traffic and Transportation Assessment Guidelines (2014) mentioned above, it would be anticipated that the level of impact experienced at junctions geographically beyond the scope of the traffic network modelled are also likely to experience impacts that are less than 5% of existing traffic movements, therefore any impacts are expected to be immaterial beyond the modelled traffic network as a result of the proposed development.

12.5.2 Construction Phase

All construction activities will be governed by a Construction Traffic Management Plan (CTMP), the details of which will be agreed with the local roads authority prior to the commencement of construction activities on site. The principal objective of the CTMP is to ensure that the impacts of all building activities generated during the construction of the proposed development upon both the public (off-site) and internal (on-site) workers environments, are fully considered and proactively managed / programmed, respecting key stakeholders requirements thereby ensuring that both the public’s and construction workers safety is maintained at all times, disruptions minimised and undertaken within a controlled hazard free / minimised environment.

The likely impact of the construction works will be short-term in nature. The number of staff on site will fluctuate over the implementation of the subject scheme. Nevertheless, based upon the experience of similar projects, it would be expected that approx. 30 - 40 staff will be on site at any one time, subsequently generating low levels of two-way vehicle trips during the peak AM and PM periods over the period of the construction works (construction workers will use shared transport). On-site employees will generally arrive before 08:00, thus avoiding the morning peak hour traffic. These employees will generally depart after 16:00.

Likely deliveries to the site would be expected to arrive at a steady rate during the course of the day, the majority of which would be lorries with inert fill material that will be brought onto the site over the entire duration of the construction stage of the development. The proposed haul routes for the fill material will exit and enter the site at the Link Road/Colpe Road Roundabout and travel either west towards the M7 Motorway or east along the Regional Road R410 and to/from their respective licensed facility.

The potential impact during the construction phase with all the above considered would have a short term effect on the surrounding road network, however, with the CTMP and deliveries managed accordingly, this will have imperceptible effect in Drogheda Town Centre and key traffic corridors within the town.

12.5.3 Operational Phase

Once the subject development is fully complete and occupied, there are two distinct peak arrival and departure times that are expected during a typical weekday. Specifically, there is expected to be a morning peak between 08:30 – 09:30 when people are leaving for work or educational purposes. An evening peak is expected between 17:00 – 18:00 when residents would be returning to the subject site.

In order to assess and analyse the impact of the proposed development on the surrounding road network, a traffic generation and distribution model (excel based) of the following junctions was created:

- Junction 1 – Dublin Road R132 / Beabeg Road Roundabout
- Junction 2 – Dublin Road R132 / Colpe Road Roundabout
- Junction 3 – Colpe Road / Mill Road
- Junction 4 – Marsh Road / Mill Road



Figure 12.2 Key Junctions assessed for the proposed development

Trip Generation

The generation of trips for Committed Developments has been carried out in accordance with each development’s respective trip rates which have been submitted to each development’s respective planning authority and agreed with the planning authority wherever possible, If no trip rates were found within the relevant transportation planning documents submitted, the equivalent land use trip rates for this proposed development, generated from the TRICS database, were applied to the committed development, in order to provide a conservative assessment of trips generated by a give committed development.

With regard to generating trips for this development, the data source used to generate the proposed development trip rates was the TRICS database. TRICS data is primarily UK based, although a number of Irish sites have been included within the last few years with these continuing to expand. TRICS will provide a reasonable indication of traffic generation from the proposed development. The trip rates generated for each unit type are outlined in **Table 12.2**.

Table 12.2 – Proposed Development Trip Rates

Land Use	AM			PM		
	Arr	Dep	Total	Arr	Dep	Total
Residential Dwellings (per unit)	0.165	0.332	0.497	0.424	0.222	0.646
Crèche (per 100sq. m GFA)	3.507	2.998	6.505	0.891	1.524	2.415

Based on the trip rates outlined above, the potential peak hour traffic generation is calculated based on 169 houses, 188 apartments (Duplex & Apartments) and a 439 sqm crèche. **Table 12.3** below summarises the predicted peak hour AM and PM traffic generated by the proposed development.

Table 12.3 – Proposed Development Vehicle Trips

Land Use	Units/GFA	AM Trips			PM Trips		
		Arr	Dep	Total	Arr	Dep	Total
Residential	357	59	118	177	151	79	230
Crèche *	308 sq. m	15	13	28	14	18	32

It is noted that whilst the proposed creche has been included within the trip generation, in reality, this facility will more than likely predominantly generate ‘internal’ trips from residents within the boundary of the proposed development.

Committed Developments

There are five committed developments in the vicinity of the site which hold planning permissions and may have an effect on the local road network. Accordingly, all five of these committed applications have been included within modelling scenarios for the proposed development to account for cumulative impacts on the road network. The trips generated from these committed developments have been applied to the network, in accordance with TII guidelines and the trip generation information contained within the relevant transport assessments, agreed with planning authorities. Where developments are situated in more remote locations these trips have instead been accounted for within network growth. The committed applications in the vicinity of the site are as follows:

Commercial Development (Ref: LB/180620) - Meath County Council

A ten-year permission for a commercial development at Colpe Road, Colpe West, Drogheda, Co. Meath was granted on the 4/9/2018 (Ref. LB/180620).

The development site is located North of Colpe Road and consists of the demolition of the existing habitable house and construction of 1 no. 4 storey office building consisting of 2 no. blocks, providing a total gross floor

area of 11,205 sq.m, and includes for a Link Street of approximately 720m in length. The area of the permitted road infrastructure has been included within the current SHD application, and the alternate road design now proposed will supersede that which is permitted and partially implemented.

New Primary School - Meath County Council Ref: SA130927 and An Bord Pleanála Reference: PL17.243331

Planning permission was granted for a primary school with modifications on 18/08/2014 by An Bord Pleanála following a third party appeal for the following;

'Removal of all existing temporary school buildings, construction of a new two storey primary school comprising of 16 classrooms, 4 resource rooms, 1 general purpose hall, 1 base classroom special needs unit and ancillary accommodation, all associated external works including provision of vehicular entrance from the Mill Road and provision for future access from the proposed new Mill Road/Marsh Road link road the west, internal bus set-down and all footpaths, staff car parking, cycle parking, 2 no. ball courts, 1 junior play area, 1 soft play area, proprietary wastewater system, storm drainage system, landscaping and boundary treatments'.

It is noted that the development as permitted allows for future access from the proposed new Mill Road/Marsh Road link road to the west, which the proposed development now seeks to realise. It is also noted that Condition No.3 of ABP Reference: PL17.243331 states;

'3. (a) The route of the potential future access road within the site, shown on drawing C-005 revision PL1, submitted to the planning authority on the 2nd day of December 2013, shall be kept free from development and shall be reserved for this road.

(b) When the Mill Road/Marsh Road Link Road has been constructed, vehicular access to such Road shall be provided to the south-western boundary of the site by such future access road, together with revised set down area, to details to be agreed with the planning authority at that time. When the school is connected to the Link Road, the existing vehicular access to Mill Road shall be permanently closed.

Reason: In the interests of orderly development and to ensure that access from the proposed Mill Road/Marsh Road Link Road can be effected in the future, in accordance with the provisions of the Local Area Plan'

Temporary Post Primary School – Meath County Council Ref: LB190739

On the 31st of July 2019, a decision to grant permission was issued by the Planning Authority for the following development on a site to the southeast of the main SHD site. The development was described as follows:

"The provision of a temporary post primary school by way of construction of 3no. prefabricated buildings (c 190 sq. m 239 sq. m & 469 sq m) on a defined site area (c. 0.643Ha) to be enclosed within a 2m high welded mesh fencing and access gates with associated site works including provision of new site entrance onto new road as granted planning permission under Planning Ref LB 180620, short term temporary entrance onto Mill Road, car parking, drop off area and hard surface play area, wastewater treatment system and associated percolation area. Temporary permission for a period no longer than 5 years is being sought."

This temporary secondary school provides for a new access onto the link road as permitted under Planning Ref. LB 180620, which is partially implemented at present. As set out in further detail herein, the area of the permitted roadway is included in the current SHD application, and the revised road proposal will supersede the partially implemented permitted roadway.

Residential Development – Louth County Council Ref: 17387

On the 7th of August 2017, a final grant of permission was issued by Louth County Council on lands at Marsh Road, Newtown, Lagavooren, Drogheda, for a residential development comprising of the following:

"Permission for development to consist of the construction of a total of 133 no. two storey residential dwellings in a mix of detached, semi-detached and terraced form. Vehicular access is from the Marsh Road (R150). The development also provides for all associated site development works including alterations to ground levels,

internal roads, car-parking, footpaths, open space, public lighting, landscaping and boundary treatments. The application site was previously granted planning permission under ref. no. 06/52 for 260 no. residential units.”

Approved Strategic Housing Development – An Bord Pleanála Reference: ABP-3037899-19

On the 10th of June 2019, permission was granted for a Strategic Housing Development at Bryanstown, within the southern environs of Drogheda. The approved development comprises 250 no. dwelling units (94 no. houses, 156 no. duplex/apartments), creche and associated site works. The approved Strategic Housing Development accesses the neighbouring road network via Beamore Road R108.

Trip Distribution

Trip Distribution for the traffic network varies with changes and planned development to the approved road (LB180620) to connect further northbound, in accordance with LIHAF and MCC planning objectives to connect the approved link road northbound to Drogheda Town Centre. The road network is planned to be extended to Marsh Road, providing connectivity to Colpe Road. Accordingly, Trips have been distributed in line with the adjusted base network flows, derived using Traffic Survey data and CSO Census travel and journey information. For the opening year (2022), all traffic enters and leaves the proposed site via the signal-controlled junction travelling southbound towards Colpe Road. In all future design years (2027 and 2037) trips arrive and depart from the subject site north and southbound at a 50% / 50% split assumed.

Traffic Growth

The Traffic and Transportation Assessment (TTA) undertaken, adopted an Opening Year of 2022 and Future Horizon Year of 2027 (+5 Years) and 2037 (+15 Years) as per NRA guidelines. Although traffic growth may not increase at the rates once predicted, to ensure a robust analysis of the impact of traffic upon the local road network we have adopted growth rates using the National Road Authority (NRA) ‘Future Traffic Forecasts 2002 – 2040’ projections.

Table 6.2 within the TII Project Appraisal Guidelines provides Annual National Traffic Growth Factors for the different regions within Ireland. As the subject site is located within county Meath, the growth factors outlined within **Table 12.4** below have been applied for.

Table 12.4 – National Traffic Growth Forecasts: Annual Growth Factors (Extracted: PE-PAG-02017)

Name	Low Growth				Medium Growth				High Growth			
	2016-2030		2030-2040		2016-2030		2030-2040		2016-2030		2030-2040	
	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
Meath	1.0156	1.0349	1.0052	1.0164	1.0173	1.0365	1.0070	1.0186	1.0205	1.0400	1.0108	1.0226

Applying the annual factors (Medium Growth) as outlined in **Table 12.4** for the adopted Opening Year (2022) and Future Horizon Years (2027 & 2037), the following growth rates have been adopted to establish corresponding 2022, 2027 and 2037 baseline network flows:

- 2017 to 2022 – 1.089 (or 8.9%)
- 2017 to 2027 – 1.187 (or 18.7%) and
- 2017 to 2037 – 1.299 (or 29.9%)

Assessment Scenarios

This analysis looks at four different traffic scenarios, with two different network scenarios, namely an Option A – including the Link Street through route connecting to Marsh Road and the Newtown LIHAF road and an Option B – Without the Link Street Through Route, both across ‘Do Minimum’ and ‘Do Something’ scenarios. Between these two options assessed there is a variation on the traffic network due, which will in turn result in different results for junction impact analysis. The main difference between Option A and Option B is the distributions and diversions of trips along the approved link street (Ref. LB180620)

Accordingly, the assessment scenarios for both Option A and Option B are as follows:

Do Minimum:

- 2022 'Base Flow +Committed Developments' Traffic Scenario
- 2027 'Base Flow +Committed Developments' Traffic Scenario
- 2037 'Base Flow +Committed Developments' Traffic Scenario

Do Something:

- 2022 'Do Minimum + Proposed Development' Traffic Scenario
- 2027 'Do Minimum + Proposed Development' Traffic Scenario
- 2037 'Do Minimum + Proposed Development' Traffic Scenario

Impact of Proposals

The Transport Infrastructure Ireland document 'Guidelines for Traffic and Transport Assessment Guidelines' states that the impact of a proposed development upon the local road network is considered material when the level of traffic it generates surpasses 10% and 5% on normal and congested networks respectively. When such levels of impact are generated, a more detailed assessment should be undertaken to ascertain the specific impact upon the network's operational performance. These same thresholds are reproduced in the NRA/TII document entitled Traffic and Transport Assessment Guidelines (2014).

The following key junctions were assessed in terms of the percentage impact resulting from the implementation of the proposed development:

- Junction 1 – Dublin Rd R132 / Beamore Rd
- Junction 2 – Dublin Rd R132 / Colpe Rd
- Junction 3 – Colpe Rd / Mill Rd / Link Street
- Junction 4 – Marsh Rd / Mill Rd

Option A – With Through Route

The impact assessment, discussed in detail in the TTA report, showed that Junction 1, Junction 2 and Junction 4 displayed a level of impact that was below the 10% threshold. Junction 3, the Colpe Road Mill Road junction, displayed a level of impact that exceeded the 10% threshold. Therefore, this junction was subject to further analysis, with an ARCADY analysis undertaken to display that the junction will operate within capacity for all future design scenarios. A TRANSYT model was developed for the site access junction with all scenarios analysed in order to determine the capacity levels for Opening and Future year scenarios. The results showed that, as a standalone junction, the proposed signal-controlled site access junction operates within capacity for all years assessed.

Option B – Without Through Route

The impact assessment for the Option B assessment, also shown within the Traffic and Transportation Assessment for this development, showed that Junction 1 and Junction 2 display a level of impact less than the 10% threshold indicated by TII/NRA guidelines that further analysis is required for detailed junction assessment. Accordingly, Junctions 3 and 4 were subject to further analysis to prove that both junctions will operate within capacity for the future design years. A PICADY model was developed to analyse the existing priority-controlled junction between Mill Road and Marsh Road, with results showing that this junction will operate within capacity for all future design years. An ARCADY model was developed for the proposed 4 arm roundabout junction between the approved link street, Mill Road and Colpe Road to display that the junction will operate within capacity for all future design scenarios. A TRANSYT model has also been developed for the proposed signal-controlled Site Access junction, which is accessed via the approved Link Street (LB180620). Analysis shows that this signal-controlled junction operates within capacity for all design years assessed.

The traffic network was assessed for the impact of junctions, which is determined by comparing the development traffic to the existing turning movements at junctions; should development traffic exceed 5% of the turning movements in areas where there is potential for congestion or sensitivity, further analysis is undertaken, in other

areas, a threshold of development traffic exceeding 10% of junction movements is adopted for further analysis of detailed traffic modelling for junction capacity as a result of a development.

In order to determine the effects on areas outside the scope of the traffic network modelled, the impacts of the proposed development on all junctions within the traffic network were reviewed to determine whether they were materially impacted. As the junctions assessed which are furthest from the proposed development did not display a material impact greater than the 5% threshold, as per the NRA/TII Traffic and Transportation Assessment Guidelines (2014) mentioned above, it would be anticipated that the level of impact experienced at junctions geographically beyond the scope of the traffic network modelled are also likely to experience impacts which are less than 5% of existing traffic movements, and therefore any impacts are expected to be immaterial beyond the modelled traffic network as a result of the proposed development.

Julianstown is geographically beyond the scope of the traffic network modelled, as mentioned above. However, for a robust analysis and due to traffic congestion in Julianstown (referred to in the “Julianstown R132: Preliminary Business Case”, Section 1.2, dated December 2018) the potential traffic impact on Julianstown as a result of this proposed residential development has been assessed.

The percentage impact assessment, analysing the increase in vehicular traffic proposed to pass through Julianstown, as a result of the proposed residential development, has shown that the increase in traffic flows through the area does not meet the TII thresholds for further analysis, therefore, the proposed development does not significantly impact Julianstown and it can be assumed the residential development would not cause significant impacts on capacity or delays within this area (refer to the Traffic and Transport Assessment (TTA) Report within the planning application package for further information).

12.6 DO MINIMUM IMPACT

In the absence of the proposed development, the operational performance of the existing junctions on the surrounding road network will be impacted only by committed developments and forecasted network traffic growth. Full analysis may be seen within the Traffic and Transport Assessment, highlighting changes between the baseline traffic trends from survey data and the changes proposed by committed developments, including for a new Link Street, approved by Meath County Council under the planning reference *LB180620* which is included in, and amended by the current application.

12.7 POTENTIAL CUMULATIVE IMPACTS

Potential cumulative impacts have been assessed in relation to the existing and permitted transportation schemes.

Any other future development in the vicinity of the site would have to similarly undergo Traffic and transport assessments to assess the potential cumulative impacts to the transport network. A desktop study was conducted of planning applications in the vicinity of the subject development on the Meath County Council and Louth County Council planning databases to assess any cumulative impacts from granted or committed applications close to the subject scheme. Planning applications for five committed developments were found within the vicinity of the transport network assessed (mentioned in Section 12.5), that would have a cumulative impact to traffic or to this proposed development. The aforementioned committed developments were included in the traffic assessment.

12.8 AVOIDANCE, REMEDIAL AND MITIGATION MEASURES

12.8.1 Construction Phase

TRANS CONST1: All construction related parking will be provided on site. Construction traffic will consist of the following two principal categories:

- Private vehicles owned and driven by site construction staff and by full time supervisory staff;
- Excavation plant and dumper trucks involved in site development works and material delivery vehicles for the following: granular fill materials, concrete pipes, manholes, reinforcement steel, ready mix concrete and mortar, concrete blocks, miscellaneous building materials, etc.

It is anticipated that the generation of HGV's during the construction period will be evenly spread throughout the day and as such will not impact significantly during the peak traffic periods.

12.8.2 Operational Phase

TRANS OPER1: A number of walking and cycling connection points are proposed within the development. These connection points will provide access for pedestrians and cyclists onto the approved Link Road, further leading onto Colpe Road as well as R132 Dublin Road, via a proposed pedestrian/bridge over the Dublin-Belfast Railway Line leading towards Drogheda Town Centre. These facilities will provide attractive, convenient and safe routes for residents. Therefore, there are good links proposed for residents to travel by more sustainable modes.

TRANS OPER2: A Mobility Management Plan (MMP) will be prepared by the development's management company for residents within the apartment units in order to guide the delivery and management of coordinated initiatives post construction. The MMP ultimately seeks to encourage sustainable travel practices for all journeys to and from the proposed development.

12.9 PREDICTED IMPACTS OF THE PROPOSED DEVELOPMENT

12.9.1 Construction Phase

Provided the above mitigation measures and management procedures are incorporated during the construction phase, the residual impact on the local receiving environment will be temporary in nature and neutral in terms of quality and effect.

The significance of each of the projected impacts are detailed in **Table 12.5** for the following key junctions:

- **Junction 1** – Mill Road / Colpe Road Roundabout
- **Junction 2** - Colpe Road / R132 Dublin Road Roundabout at Southgate Shopping Centre.
- **Junction 3** - R132 Dublin Road / Beamore Road Roundabout at Southgate Shopping Centre.
- **Junction 4** - Marsh Road / Mill Road.

The significance of the impacts has been determined in accordance with the classifications stipulated within the Environmental Protection Agency Guidelines on the Information to be Contained in Environmental Impact Assessment Reports - Draft (August 2017).

Table 12.5: Impact Significance – Construction Phase

	Junctions	Environment Character	Quality / Scale of Impact	Impact Significance	Duration
1	Colpe Road / Mill Road / Link Street	Low Sensitivity	Negative - Low	Slight	Temporary
2	R132 / Colpe Road	Low Sensitivity	Negative - Low	Slight	Temporary
3	R132 / Beamore Road	Low Sensitivity	Negative - Low	Slight	Temporary
4	Mill Road / Marsh Road	Low Sensitivity	Negative - Low	Slight	Temporary

12.9.2 Operational Phase

The implementation of the mitigation measures outlined above, will ensure that the residual effect on the local receiving environment is both managed and minimised. The analysis predicts the scale of residual impact, during the 2037 design year for Option A is as shown in **Table 12.6**.

Table 12.6: Network Impact Categorisation 2037 AM and PM Peak Hours for Option A

Junction ID	Junction/ Location	2037 Option A	
		AM Peak Impact Scale	PM Peak Impact Scale
1	Colpe Road / Mill Road / Link Street	15.7%	25.4%
2	R132 / Colpe Road	1.8%	0.0%
3	R132 / Beamore Road	0.8%	2.2%
4	Mill Road / Marsh Road	-32.7%	-17.3%

The significance of each of the projected impacts at each of the key links is detailed within the **Table 12.7** and **Table 12.8** for the worst case (e.g. peak hours) 2037 Future Year scenarios for Option A.

Table 12.7: Impact Significance – 2037 Design Year (AM) for Option A

Ref	Environment Character	Quality / Scale of Impact	Impact Significance	Duration
1	Low Sensitivity	Low	Slight	Long Term
2	Low Sensitivity	Low - Negligible	Not Significant	Long Term
3	Low Sensitivity	Low - Negligible	Not Significant	Long Term
4	Low Sensitivity	Low - Negligible	Not Significant	Long Term

Table 12.8: Impact Significance – 2037 Design Year (PM) for Option A

Ref	Environment Character	Quality / Scale of Impact	Impact Significance	Duration
1	Low Sensitivity	Low	Slight	Long Term
2	Low Sensitivity	Low - Negligible	Not Significant	Long Term
3	Low Sensitivity	Low - Negligible	Not Significant	Long Term
4	Low Sensitivity	Low - Negligible	Not Significant	Long Term

The analysis predicts the scale of residual impact, during the 2037 design year for Option B is as shown in **Table 12.9**.

Table 12.9: Network Impact Categorisation 2037 AM and PM Peak Hours for Option B

Junction ID	Junction/ Location	2037 Option B	
		PM Peak Impact Scale	PM Peak Impact Scale
1	Colpe Road / Mill Road / Link Street	26.4%	34.5%
2	R132 / Colpe Road	7.2%	5.8%
3	R132 / Beamore Road	4.6%	0.6%
4	Mill Road / Marsh Road	7.4%	14.8%

The significance of each of the projected impacts at each of the key links is detailed within the **Table 12.10** and **Table 12.11** for the worst case (e.g. peak hours) 2037 Future Year scenarios for Option B.

Table 12.10: Impact Significance – 2037 Design Year (AM) for Option B

Ref	Environment Character	Quality / Scale of Impact	Impact Significance	Duration
1	Low Sensitivity	Low	Slight	Long Term
2	Low Sensitivity	Low - Negligible	Not Significant	Long Term
3	Low Sensitivity	Low - Negligible	Not Significant	Long Term
4	Low Sensitivity	Low - Negligible	Not Significant	Long Term

Table 12.8: Impact Significance – 2037 Design Year (PM) for Option B

Ref	Environment Character	Quality / Scale of Impact	Impact Significance	Duration
1	Low Sensitivity	Low	Slight	Long Term
2	Low Sensitivity	Low - Negligible	Not Significant	Long Term
3	Low Sensitivity	Low - Negligible	Not Significant	Long Term
4	Low Sensitivity	Low	Slight	Long Term

12.10 MONITORING

During the construction stage the following monitoring exercises are likely to be required. The specific compliance exercises to be undertaken in regard to the range of measures detailed in the final construction management plan will be agreed with the planning authority.

- Compliance with construction vehicle routing practices,
- Compliance with construction vehicle parking practices,
- Internal and external road conditions and
- Timings of construction activities.

12.11 REINSTATEMENT

Reinstatement is not applicable to the traffic section.

12.12 INTERACTIONS

Noise and Vibration: Within Chapter 10 (Noise and Vibration) of this EIAR, it has been stated that without a detailed construction programme, it is difficult to determine the magnitude of noise emissions to the local environment. However, predictions have determined that noise sensitive properties at distances greater than 40m, the predicted noise emission levels are below threshold for significant impact. For any noise sensitive locations within 40m of the construction activity, potential negative, moderate and short-term effects are likely.

Construction Vibrations are expected to have an impact that is considered neutral, imperceptible and short-term.

The predicted change noise levels associated with additional traffic is predicted to be of imperceptible impact along the existing road network

The projected increase in vehicle traffic during the operational stage may lead to a slight increase in noise levels during peak trip generation periods, however, implementation of the mitigation measures described in the Noise and Air Quality Section of this Environmental Impact Assessment Report will prevent and minimize the potential impacts of this interaction.

Air Quality: The Air Quality and Climate Chapter of this EIAR (Chapter 9) states that the impact of the proposed development on air quality and climate is considered Long-term and imperceptible for the Operational Stage of the proposed development.

12.13 DIFFICULTIES ENCOUNTERED IN COMPILING

No particular difficulties were encountered in completing this section.

12.14 REFERENCES

- Bus Eireann website (www.buseireann.ie)
- Department of Transport's Traffic Signs Manual "Chapter 8 Temporary Traffic Measures and Signs for Roadworks"
- Department of Transport's "Guidance for the Control and Management of Traffic at Roads Works – 2nd Edition" (2010)
- Environmental Protection Agency Guidelines on the Information to be Contained in Environmental Impact Assessment Reports – Draft (August 2017)
- Irish Rail website (www.irishrail.ie)
- Meath County Development Plan (2013-2019)
- National Transport Authority; Greater Dublin Area Cycle Network Plan (2013)
- NRA 'Traffic and Transport Assessment Guidelines' (2014)
- The Institution of Highways and Transportation 'Guidelines for Traffic Impact Assessments' (1994)
- Transport for Ireland (www.transportforireland.ie)
- Transport Infrastructure Ireland (www.tii.ie)